

## REMARKS

### I. Introduction

In response to the Office Action dated January 31, 2006, claims 2, 10, 17 and 18 have been amended. Claims 1-24 remain in the application. Re-examination and re-consideration of the application, as amended, is requested.

### II. Claim Amendments

Applicants' attorney has made amendments to the claims as indicated above. These amendments were made solely for the purpose of clarifying the language of the claims, and were not required for patentability or to distinguish the claims over the prior art.

### III. Non-Art Rejections

In paragraphs (3)-(4) of the Office Action, claims 2-5, 10-13 and 18-21 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regards as the invention.

Applicants' attorney has amended claims 2, 10 and 18 to overcome this rejection.

### IV. Prior Art Rejections

In paragraphs (5)-(6) of the Office Action, claims 1-5, 9-13 and 17-21 were rejected under 35 U.S.C. §103(a) as being unpatentable over Leung et al. (Leung), U.S. Patent No. 5,615,361, in view of George Koch et al. (Koch), "Oracle: the complete reference," third edition, 1995, pages 253-266.

However, in paragraphs (7)-(8) of the Office Action, claims 6-8, 14-16 and 22-24 were indicated as being allowable if rewritten in independent form to include the base claim and any intervening claims.

Applicants' attorney acknowledges the indication of allowable claims, but respectfully traverses the rejections. Applicants' attorney submits that Applicants' invention, as recited in independent claims 1, 9 and 17, is patentable over the references, because it contains limitations not taught by the references.

The Office Action first asserts that Leung discloses the claimed limitations of "(a) determining whether a query includes a self-join that is transitively derived through table

expressions,” by providing a software allowing the RDBMS to convert a scalar subquery to a join operation and consider different join orders.

Applicants’ attorney disagrees.

Applicants’ attorney notes that the full limitation recites “(a) determining whether a query includes a self join that is transitively derived through table expressions having UNION operators” (where the underlined portion indicates what the Office Action omitted).

Moreover, converting a scalar subquery to a join operation, and considering different join orders, as performed in Leung is not in any way related to this limitation. As defined in Leung, a subquery is found in a predicate of the query as an operand to a relational operator as a Boolean factor in the WHERE clause. A scalar subquery is a subquery that returns at most one tuple.

However, scalar subqueries, even when converted to joins, are not self-joins. Specifically, scalar subqueries are not self-joins that are transitively derived through table expressions having UNION operators. Indeed, nowhere does Leung discuss self-joins.

The Office Action next asserts that Leung discloses the claimed limitations of “(b) simplifying the query to eliminate the table expressions and to reduce the query to an equivalent query over tables, when the query includes the self-join that is transitively derived through the table expressions,” by providing a query transformation for elimination of correlation in the queries.

Applicants’ attorney disagrees.

Leung discusses the elimination of correlation in the context of correlated subqueries. A correlated subquery is a subquery that refers to at least one column of the outer query, so the correlation refers to correlated columns, i.e., columns found in both the subquery and the outer query. However, correlated subqueries have no relation to self-joins. Specifically, correlated subqueries are not self-joins that are transitively derived through table expressions having UNION operators.

Moreover, Leung performs two types of query transformations: (1) the transformation of scalar subqueries into joins, or (2) the elimination of distinctiveness requirements (i.e., DISTINCT keywords) from SELECT clauses. However, these two types of transformations do not involve the elimination of table expressions when a self-join is transitively derived through these table expressions having UNION operators. As noted above, nowhere does Leung discuss self-joins.

Thus, Leung does not teach or suggest the limitations of Applicants’ independent claims in the manner suggested by the Office Action.

Oracle fails to overcome the deficiencies of Leung. Recall that Oracle was cited by the Office Action merely for teaching the UNION operator in SQL. Indeed, Oracle only discusses the UNION operator in the most elementary terms. However, Oracle does not refer to self-joins, self-joins transitively derived through table expressions having UNION operators, or the simplification of queries having self-joins transitively derived through table expressions having UNION operators in order to eliminate the table expressions and to reduce the query to an equivalent query over tables.

Thus, Oracle does not teach or suggest the limitations of Applicants' independent claims in the manner suggested by the Office Action.

Consequently, when combined, Leung and Oracle would not teach or suggest all the limitations of Applicants' claims. Indeed, when combined, Leung and Oracle would not teach any of the limitations of Applicants' claims.

As a result, the combination of Leung and Oracle does not anticipate or render obvious Applicants' claimed invention. Moreover, the various elements of Applicants' claimed invention together provide operational advantages over the combination of Leung and Oracle. In addition, Applicants' invention solves problems not recognized by either Leung or Oracle.

Thus, Applicants' attorney submits that independent claims 1, 9, and 17 are allowable over the reference. Further, dependent claims 2-8, 10-16, and 18-24 are submitted to be allowable over the reference in the same manner, because they are dependent on independent claims 1, 9, and 17, respectively, and thus contain all the limitations of the independent claims. In addition, dependent claims 2-8, 10-16, and 18-24 recite additional novel elements not shown by the reference.

V. Conclusion

In view of the above, it is submitted that this application is now in good order for allowance and such allowance is respectfully solicited.

Should the Examiner believe minor matters still remain that can be resolved in a telephone interview, the Examiner is urged to call Applicants' undersigned attorney.

Respectfully submitted,

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